

Amendment to the Claims

1 (Currently Amended). A radio transceiver, comprising:

radio front end for receiving, amplifying and down-converting and filtering a received radio frequency (RF) signal to produce a ~~low-frequency-received~~ an ingoing downconverted and filtered signal;

analog-to-digital converter (ADC) operatively coupled to receive the ~~low-frequency received~~ ingoing downconverted and filtered signal, the ADC producing an ingoing digital ~~low frequency~~ signal;

baseband processor coupled to receive and process the ingoing digital ~~low-frequency~~ signal; and

radar detection ~~circuit~~ module for detecting a radar signal, the radar detection module coupled to receive the ingoing digital ~~low-frequency~~ signal, wherein the radar detection ~~circuit~~ module further includes:

multiplication block for receiving and squaring the ingoing digital signal to produce squared components of the ingoing digital signal;

logarithmic conversion block for producing a logarithmic signal based on the squared components of the ingoing digital signal; and

a threshold comparison state machine that receives the logarithmic signal and generates a measures magnitude levels of received signals, rise time, fall time, and detects a received radar pulse pattern and produces a corresponding control signal indicating that a radar signal has been detected to the baseband processor to inhibit wireless transmissions from the radio front-end while the radar pulse pattern is being ~~received~~detected; and

wherein the baseband processor does not produce outgoing digital signals based on the control signal while the radar pulse pattern is being detected.

2 (Currently Amended). The radio transceiver of claim 1 wherein the radar detection module further includes a moving average filter that receives the squared components and produces averaged squared components to the logarithmic conversion block ~~the radio front-end~~

~~includes a low noise amplifier (LNA) for amplifying the received RF signal and down-conversion circuitry for down-converting the received and amplified RF signals to produce a down-converted signal.~~

3 (Currently Amended). The radio transceiver of claim 2 wherein the radar detection module further includes logic for adjusting a gain of the logarithmic signal prior to delivering the logarithmic signal to the threshold comparison state machine~~down-converted signal comprises one of a low-intermediate frequency (IF) or baseband signal.~~

4 (Currently Amended). The radio transceiver of claim ~~[[2]]~~1 wherein the squared components are produced from the multiplication block to a summing module that produces a sum of the squared components~~down-converted signal is produced to low-pass filter circuitry for producing low-pass filtered signals, wherein the low-pass filtered signals are the low-frequency signals produced to the analog-to-digital converter.~~

5 (Currently Amended). The radio transceiver of claim ~~[[2]]~~ wherein a ~~the~~ down-converted signal is produced having I and Q components ~~as I and Q channel signals.~~

6 (Currently Amended). The radio transceiver of claim 5 wherein the radar detection module circuit receives the I and Q components in a digital form~~channel digital low-frequency signals as the digital ingoing signal wherein the I and Q components are each squared by the multiplication block.~~

7 (Currently Amended). The radio transceiver of claim 1 wherein the radar detection circuit measures signal magnitude rises above a plurality of thresholds, rise time from a first to a second threshold, time above the second threshold, and fall time from the second to the first threshold to determine pulse characteristics for received pulses of a received radar signal.

8 (Currently Amended). The radio transceiver of claim 7 wherein the radar detection circuit monitors at least one of a magnitude, a pulse width and timing and timing relationships of received pulses to determine whether a radar ~~pulse~~ signal has been received.

9 (Currently Amended). The radio transceiver of claim 8 wherein the ~~radar detection circuit comprises a threshold comparison state machine for determining~~ determines whether the received pulses have ~~pulse~~ has a specified characteristic of a radar ~~pulse~~ signal.

10 (Original). The radio transceiver of claim 8 wherein the control signal produced by the radar detection circuit is a binary signal that is set to a specified logic state whenever the radar signal is detected.

11 (Previously Presented). The radio transceiver of claim 1 wherein the control signal produced by the radar detection circuit includes threshold level and timing information wherein the baseband processor determines that a radar signal has been received ~~detected~~.

12 (Currently Amended). The radio transceiver of claim 11 wherein logic within the baseband processor monitors at least one of the magnitude, the pulse width and the timing and

timing relationships of received pulses to determine whether a radar ~~pulse~~ signal has been received.

13 (Currently Amended). The radio transceiver of claim 1 wherein the baseband processor determines whether the ~~pulse is~~ received signal comprises a radar pulse based upon a detected pulse width.

14 (Currently Amended). The radio transceiver of claim 13 wherein the baseband processor determines that the ~~pulse is not~~ received signal does not comprise a radar pulse if the pulse width is less than a specified amount.

15 (Currently Amended). The radio transceiver of claim 13 wherein the baseband processor determines that the ~~pulse is not~~ received signal does not comprise a radar pulse if the pulse width is greater than a specified amount.

16 (Currently Amended). The radio transceiver of claim 13 wherein the baseband processor determines that the ~~pulse is not~~ received signal does not comprise a radar pulse if a period between pulses is not approximately constant.

17 (Original). A radio transceiver, comprising:

- radio front end for receiving, amplifying and down converting and filtering a radio frequency (RF) signal to produce a low frequency received signal;

- analog to digital converter operatively coupled to receive the low frequency received signal, the ADC producing a digital low frequency signal;

- baseband processor coupled to receive and process the digital low frequency signal;

- radar detection circuit coupled to receive the digital low frequency signal, wherein the radar detection circuit further includes:

 - multiplication circuitry for receiving and squaring a low frequency digital signal;

 - moving average filter coupled to selectively receive an output signal produced by the multiplication circuitry, the moving average filter producing a moving average filtered signal;

 - first conversion block for converting a magnitude of the moving average filtered signal into decibel values; and

 - a threshold comparison state machine coupled to receive an output of the first conversion block in decibel values, the threshold machine for measuring rise time, fall time, and magnitude levels of received signals and detects a received radar pulse pattern and produces a corresponding control signal indicating whether a radar signal has been detected to the baseband processor; and

- wherein the processor is coupled to receives rise time, fall time, and magnitude levels of received signals from the threshold comparison state machine, and wherein the processor determines whether the radar signal has been received and, if so, inhibits transmissions on overlapping frequency bands.

18 (Original). The radio transceiver of claim 17 wherein the radar detection circuit further includes a second conversion block coupled to selectively receive the output signal produced by the multiplication circuitry, the second conversion block converting the magnitude of the moving average filtered signal into decibel values.

19 (Original). The radio transceiver of claim 18 wherein the radar detection circuit further includes a summing node for subtracting a receiver gain setting from the magnitude in decibel values of the output of the multiplication circuitry.

20 (Original). The radio transceiver of claim 19 wherein the moving average filter and the first conversion block are coupled serially in a first branch and the second conversion block and the summing node are coupled in a second branch and wherein logic selects between the first and second branch based upon whether a wireless local area network (WLAN) signal is being received.

21 (Original). The radio transceiver of claim 20 wherein the first branch is selected if the wireless LAN signal is being received and the second branch is selected if the wireless LAN signal is not being received.

22 - 32. (Canceled)

33 (New). A method for detecting a radar signal, comprising:

- in a radio front end circuit, receiving, amplifying and down-converting and filtering a radio frequency (RF) signal and producing an ingoing downconverted signal;

- producing a digital ingoing signal based on the ingoing downconverted signal;

- receiving and squaring the digital ingoing signal and producing squared components of the digital ingoing signal;

- producing a logarithmic signal based on the squared components of the digital ingoing signal; and

receiving the logarithmic signal and generating a control signal indicating that a radar signal has been detected while a radar pulse pattern is being detected.

34 (New). The method of claim 33 further including averaging the squared components and producing averaged squared components prior to producing the logarithmic signal.

35 (New). The method of claim 33 further including adjusting the logarithmic signal based on a gain setting.

36 (New). The method of claim 33 further including, in the radio front end, producing low pass filtered signals having I and Q components as the ingoing downconverted signal wherein the I and Q components are squared in the squaring step.

37 (New). The method of claim 33 further including measuring signal magnitude rises above a plurality of thresholds, rise time from a first to a second threshold, time above the second threshold, and fall time from the second to the first threshold.

38 (New). The method of claim 33 further including monitoring at least one of a magnitude, a pulse width and timing and timing relationships of received signals to determine whether a radar signal has been received.

39 (New). The method of claim 33 further including determining whether the received signal comprises a radar signal based upon pulse width of received pulses.